

Solutions for Including Individuals with Disabilities

Including Children with Autism in General Physical Education: Eight Possible Solutions

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To successfully include students with autism, you must first believe that it can be done.

United States Department of Education statistics (USDE, 2003) indicate that the number of children diagnosed with autism has increased more than fivefold since 1990 and that the percentage of these children being included in general education settings has more than tripled in the same time period. Few teachers, however, have the training and experience to include students with autism in their classrooms and frequently feel uncomfortable and frustrated when including one or more students with autism in general classes (Kelly & Block, 2001).

Autism is a complex developmental disability that typically appears in the first three years of life; it is the result of a neurological disorder that affects the normal functioning of the brain, affecting development in the areas of social interaction and communication (Dunn & Leitschuh, 2006). Students with autism have difficulty with social interactions, communicating, and using sensory information. Autism also affects children's abilities to play and acquire leisure skills. A child with autism may exhibit motor skills, fitness performance, participation behaviors, and intellectual functions that are below the expected range for a given age (Auxter, Pyfer, & Huetig, 2005). These challenges make it difficult for physical education teachers to fully include children with autism in their general physical education (GPE) curriculum. The purpose of this article is to present eight possible solutions for including children with autism in GPE settings.

Understanding Inclusive Physical Education

Inclusive physical education is an educational placement where all children, including those with autism, are accepted and educated (Kelly, 1994). The primary goal of inclusive physical education is to engage every child and meet his or her individualized need in a supportive environment (Block, 2000). To achieve this goal, the physical educator needs to have a positive attitude toward children with autism and modify the physical education curriculum to fully include all children (Sherrill, 2004).

Some GPE teachers, however, feel ill-equipped to teach children with autism in an inclusive class (Kelly & Block, 2001). Some GPE teachers become frustrated because they believe that it is very difficult, if not impossible, to teach students with autism in a physical education class along with students without disabilities. This belief must change if the goal of helping all children reach their full physical potential is to be reached.



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Using novel and engaging equipment will facilitate learning and interaction.

Individualizing Instruction

Most physical education classes are very diverse in terms of student ability and skill. To teach students in this environment, a GPE teacher must individualize instruction to meet each student's needs, including those of children with autism. The primary goal is to engage all students to fully participate in the physical education class activities.

Research has shown that children with autism may be delayed in their physical development, lose movement skills, show motor clumsiness, and score poorly on fitness measures (Reid & Collier, 2002). For these reasons, children with autism may be excluded from full participation in group activities and team sports (Schwartz, Billingsley, & McBride, 2005). However, when teachers offer individualized instruction, students with autism are more likely to participate in the physical education class activities. More participation, in turn, will help the student with autism develop his or her motor skills and abilities.

To help individualize instruction, teachers should offer physical activities that allow children to select their own participation level based on their abilities. For example, a teacher might set up different activity stations (e.g., shooting, kicking, striking, or dribbling) and allow each student, including students with autism, to select an activity. The teacher could also allow students to choose the number of

repetitions they do when engaged in physical fitness activities (e.g., the child with autism performs four push-ups while other classmates complete 10 push-ups).

Individualized instruction includes offering many different types of equipment as well. Equipment choices need to include objects of different sizes, weights, and textures. The more variety that the GPE teacher is able to offer, the more successful the student with autism is likely to be when participating in physical education class.

Targeting Age-Appropriate Motor Skills

A child with autism can also be successfully included in a GPE class by participating in age-appropriate activities. To teach age-appropriate activities, the physical educator needs to determine the motor skills that the child with autism must have to perform a physical activity with peers who do not have disabilities (e.g., the ability to roll a ball to participate in bowling). Teaching age-appropriate motor skills to children with autism is an effective method to include these children in a GPE class (Davis & Burton, 1991). GPE teachers should conduct a survey to determine the critical motor skills that children with autism need to have to be included in physical activities. Age-appropriate motor skills should be surveyed based on such variables as motor skills commonly used in the physical activities that take place in the local community, expectations of the school's physical education curriculum, and recreational activities that peers without disabilities love to participate in (Block, 2000). The specific skills identified as the most common of these variables are then selected as the targeted motor skills for the physical education program.

Research has documented the success of this approach to including students with autism in GPE classes. In a case study completed by Zhang (2006), an eight-year-old, second-grade boy with Asperger syndrome was taught motor skills using this approach. Three critical skills were identified as necessary for him to be included in recess play-time with his peers: catching, throwing, and striking. The child was then instructed in these skills for two 60-minute sessions each week during a semester. At the end of the semester, the comparison between the pretest and posttest data indicated the child with autism made significant progress in his motor-skill performance. Most importantly, he was also able to apply and perform these skills during recess play-time with his peers.

Age-appropriate motor skills should also be taught in different settings for generalization, so that a skill learned in one setting can be applied in other settings. Many students with autism have trouble generalizing skills across settings and teachers. This means that a student with autism may use a particular skill in one place, but act as if he or she has no idea what to do if the location changes (i.e., a student may be able to roll a ball to a bowling pin in the gym, but when taken to a bowling alley may not know what to do). To ensure that students can use learned skills across settings and teachers, it is important to teach skills in a variety of settings, such as the gym, outside at recess, or in the community.

Table 1. General Teaching Strategies for Students with Autism

Adjusting Content, or What You Teach

- Plan your lessons and units with all of your students in mind. Consider their strengths and interests when selecting units of instruction.
- Include explicit instruction in play skills like turn-taking.
- Students with autism have great difficulty interacting socially. Team sports are not areas of strength for these students.
- If you are teaching a team sport, focus on skill instruction and small-group lead-up activities rather than the full team game.
- Emphasize individual and dual sports as well as lifetime leisure activities. Try offering swimming, weight training, roller skating, ice skating, cross-country skiing, or canoeing. These are individual activities that do not require lots of social interaction, but include social situations.

Methods of Instruction, or How You Teach

- Develop a predictable class routine: Warm up, practice skills, play game, put equipment away, cool down.
- When giving directions, keep them short and concise. Provide a model or demonstration.
- Teach in small, successful steps.
- Play with and engage your students.
- Students with autism have strong visual skills. Use station task cards or photo activity cards.
- Use instructional video tapes like Yo-Yo Man, or Yoga for Kids, as a teaching station.
- Warn students about changes in the routine or about changing activities: "In two minutes we will put our equipment away." Warnings and timers help students to know what to expect.

Environment, or Where and With What You Teach

- Eliminate or minimize unnecessary equipment or distractions in the gym. Put unused mats away, hide the dividing curtain behind a "mat wall," or move unused nets to the equipment room.
- Be aware that floor glare, large spaces, fluorescent or mercury vapor lights, or the acoustics of the space may be difficult for a student with autism to handle. Change what you can and work to minimize the distractions or sensory overloads in other ways. Ask parents or special education teachers what might help: sunglasses, a personal CD player, shutting down one bank of lights?
- Create a positive climate and environment.
- Teach skills in a variety of settings: indoors, outdoors, on the tennis courts, in the community, at parks and recreational facilities.
- Provide a choice of equipment.

Using Appropriate Teaching Strategies

Children with autism can learn critical motor skills through appropriate teaching strategies. An appropriate teaching strategy is a systematically planned instructional procedure designed to help children with moderate to severe disabilities, including children with autism, learn how to correctly perform a motor skill (refer to table 1 for general teaching strategies that physical educators have successfully used when including students with autism in their GPE classes). More specific teaching strategies such as response shaping, increasing prompt hierarchy, decreasing prompt hierarchy, constant time delay, and progressive time delay, have proven effective in teaching motor skills to individuals with autism (Wolery, Ault, & Doyle, 1992; Zhang, 2003). The primary goal of using these teaching strategies is to provide opportunities for success in learning various motor skills.

For example, to teach a student with autism to shoot a ball

into a hoop with his nondisabled peers, the teacher could use a five-second constant time-delay procedure. The target stimulus for initiating this skill would be "when the child sees his or her peers shoot balls," while the control prompt would be "physical assistance." The teacher would deliver target stimulus and controlling prompt at the same time for a set number of teaching trials. When finished with the teaching trials, the teacher would then present the target stimulus to the child first and wait for five seconds to see whether the control prompt should be delivered.

During this period of five seconds (i.e., constant time delay), the child has a chance to respond to the target stimulus independently or wait for the prompt from the teacher. Following the teaching trials, the child should be able to initiate this shooting skill each time he sees his peers shooting balls into hoops. The effectiveness of the constant time-delay technique has been documented in teaching aquatic skills



Teachers should tailor communication methods to the individual students. In this case, an iconic illustration (on the disk at the child's feet) showed the child how to do a sit-up.

(e.g., kangaroo, cycling, and snake) to four boys with autism (ages 7 to 9) over a 10-week period. (Yimaz, Birkan, Konukman, & Erkan, 2005).

Managing Challenging Behaviors

Many GPE teachers who teach children with autism express concern about how to manage the challenging behaviors these children exhibit. Their behaviors (such as acting as if deaf, spinning objects, engaging in odd play, and attaching to materials inappropriately) often interfere with their ability to learn (Auxter et al., 2005). One technique for dealing with these challenging behaviors is to use reactive approaches (e.g., giving verbal reprimands and time-out). These approaches, however, are rarely effective in eliminating these behaviors in children with autism (Collier & Reid, 2003). In fact, they could have the opposite effect and cause the child to become aggressive. Consequently, it is better to use more positive approaches.

Although teachers may initially see some of the behaviors that children with autism display as "weird," the students are using their behavior to communicate what they are unable to say. Interrupting or attempting to stop behaviors can cause more problems. If a child with autism likes to spin, the teacher could try using it in new and different ways, such as helicopter moves on scooters. This is a way of connecting the student's interest to physical education activities. Students

who are jumping and flapping may be saying "Wow, I am really excited, and I don't know what to do with all of this energy!" Rather than holding the student down or telling the student to stop, provide an activity that may match the behavior, like a jogging tramp.

Using incompatible behaviors is another way to manage challenging behaviors. It is very difficult to jump and flap on roller skates, ice skates, bikes, or cross-country skis. Getting a student involved in an activity that makes it difficult to exhibit a particular behavior decreases that behavior and channels the energy into other activities. Students with autism benefit from vigorous physical activity which can help reduce repetitive, self-stimulatory behaviors, and aggression, and increase physical fitness (O'Connor, French, & Henderson, 2000).

Some students with autism have aggressive ways of telling the teacher what they do not want to do (e.g., hitting, head butting, kicking, biting, scratching, and hair pulling). Handling aggressive behaviors requires communication with and collaboration from special teachers and support personnel. It may also require specialized training. Find out what is recommended by the individualized education program team and use the behavior management system that the student uses in other classes during the day. The teacher must observe the student working in a variety of activities and settings: academic, physical, leisure, and social. The teacher should also think about how to adjust the instructional setting to minimize aggression and determine whether there are particular triggers that can be eliminated. Are there particular activities, pieces of equipment, or transitional cues (whistles or scoreboard buzzers) that could be avoided? All behavior, even aggressive behavior, is communicative. Finding ways for students to make choices and teaching them how to communicate less aggressively might help to improve their behavior.

Using Unique and Novel Equipment

Using unique and novel equipment is a very effective way of increasing participation in physical education activities. Students with autism tend to have strong sensory interests: some like black holes, some are interested in objects with wheels, some like to smell things, some like objects that feel good, while others like strings. Most of us have a preferred or dominant sense for moving information to our brains (e.g., sight, touch, or listening). The same applies to students with autism. The teacher should create and select equipment based on the dominant senses demonstrated by children with autism. That is precisely what using unique and novel equipment is all about.

For example, a student is always looking into the heating vent in your gym and seems very interested in the electrical outlets, but is indifferent to most of the equipment or activities that you try in the gym. Rather than trying to get rid of that interest, try using the interest in a different way. Assume that the student really likes black holes. Take a look in your equipment room and see what you have that might

have "holes". Try whiffle balls, deck tennis rings, cardboard tubes, golf tubes, or bowling balls. All of these items have holes and are related to physical education and lifetime leisure activities. Adapting to what the student likes will help the GPE teacher develop a relationship with the student and build on the student's interest in other activities.

Equipment that is selected for use with students with autism should also be of interest to their peers without disabilities. In fact, this is a great way to increase social interactions between peers with and without disabilities. "Cool" equipment acts as a catalyst for student interactions. Inside out balls and giant sling shots will cause all kinds of kids to work and play together. All students in the class will have fun practicing tennis skills if they are using ballstompers and fishing dipnets in addition to tennis balls and tennis rackets. Physical education is equipment intensive. Selecting novel, unique, engaging, and cool equipment will facilitate learning and interaction.

Developing Social Interaction Skills

Helping students with autism interact with their peers is a very important part of their participation in physical activities. Because children with autism often show poor social-interaction skills, they must be explicitly taught the rules of engaging in social interactions. Basic social behaviors—such as taking turns, greeting peers, joining an activity, entering a game, sharing equipment, stopping or changing activities, or participating with all members of a group in an activity—need to be taught to students with autism. One of the best ways to teach these social-interaction skills is to use peer tutors in GPE settings (O'Connor et al., 2000).

Students with autism learn very well from models. When training peer tutors, it is important to identify their main task and to be specific. For example, if a child with autism likes to do her laps by herself and likes to move very slowly, the teacher can ask the peer tutor for ideas on how to change her behavior. From observation of and interaction with her, the peer tutor may find out what music and movement motivates her and communicate that to the teacher. The teacher can then use that information to change the instructions and/or music to motivate the student with autism. Sometimes it helps to assign two peers to a student with autism to provide more interactions and demonstrate turn-taking.

Simple activities like scooter rides are a good way to have peer tutors begin to interact with the child with autism. The teacher could instruct, "First give Gary a ride on the scooter, letting him hold the hoop. Then help Gary give one of you a ride on the scooter. Then let Gary ride again." Not all classmates (or teachers for that matter) feel comfortable working with students with autism, so it is important not to force partnerships, but to offer opportunities. When students work and play together in physical education, they have opportunities to meet peers in small groups, practice skills in a fun way, get to be known as individuals with strengths and weaknesses, play, interact, and learn things in class that can be used at recess, at home, or in the community.

Using Effective Communication Methods

Teaching requires communication between teachers and peers. Students with autism have particular difficulty with both receptive language (understanding what others say) and expressive language (saying something or making themselves understood). It is therefore very important for physical educators to know how a particular student with autism communicates. Many students understand sign language and gestures. Many have been taught to use picture-exchange systems of communication. Since many have very strong visual skills, pictures, photos, and illustrations can be helpful teaching tools. Some may use object cues. Physical educators should consult with the special education teachers to determine the most effective method of communication for the individual student, then learn the method, and finally become comfortable using a variety of communication methods.

Once the physical educator has learned how to communicate with the student with autism, classmates should be taught to do the same. Peers should be taught about autism in general and also about individual differences in the students attending their school. This can be done effectively if the special education and physical education teachers work together. Many parents are willing to assist with this as well.

General physical educators should try the following communication tips:

- Don't ask a student if they want to do something when there is no choice. "Do you want to do your warm-ups?" might be readily answered with a no. Merely state the direction, and offer a choice: "It's time for warm-ups. Would you like to do your exercises with Tony or with Ann?"
- Give short, precise directions that tell students what to do, rather than what not to do. Instead of "Don't run," say "Walk."
- Wait at least five to seven seconds after giving a direction before restating it, so that you do not confuse the student. It takes students with autism a while to figure out what the direction meant and to act on it.
- Minimize the use of jargon or slang. Students with autism tend to be very concrete in their interpretation of language. They will do exactly what you say, rather than what you mean. For example, if during a baseball game, the teacher yells "run home," a student with autism may take off across the street running to his or her home.
- Give directions in a low, calm voice.

Conclusion

This article presented a total of eight possible solutions for including children with autism in GPE settings. These solutions are effective, but it should be noted that not all of them are applicable to every child with autism. Thus, teachers should select which strategies to use based on the unique needs demonstrated by their particular students with autism.

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